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Wage Price Index, Australia methodology

Reference period December 2024

Released 19/02/2025

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Overview

Scope

Employing Australian organisations (private and public sector) and eligible employee jobs.

For specific employer and employee job excludes, see scope and coverage.

Geography

Data available for:

- Australia
- Sector
- State and territories

Source

Prices for a range of jobs are collected from a sample of private and public sector employers via the Wage Price Index Survey.

Collection method

An initial selection of approximately 3,300 Australian organisations (public and private) produces a subset of about 20,000 eligible jobs with data submitted electronically over successive quarters.

Concepts, sources and methods

Detailed information about the data sources and methods used to compile WPI are contained in the Wage Price Index: Concepts, Sources and Methods.

History of changes

- Sample redesign 2009
- Expenditure weights update Dec 2023
- Wage setting analytical series updated June 2023

Introduction

This publication contains indexes measuring changes in the price of wages and salaries in the Australian labour market.

The methodology used to construct the WPIs is similar to that used for other price indexes such as the Consumer Price Index. In the WPI, index numbers are compiled using information collected from a representative sample of employee jobs within a sample of employing organisations. Individual indexes are compiled for various combinations of state/territory, sector (private/public) and industry division. Industry is classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006 (cat. no. 1292.0). For more detailed information on the methodology used in the construction of the WPI, refer to Wage Price Index: Concepts, Sources and Methods (cat. no. 6351.0.55.001) (/statistics/detailed-methodology-information/concepts-sources-methods/wage-price-index-concepts-sources-and-methods/2012) .

Current published indexes

Four WPIs are constructed and published quarterly. These indexes were first compiled for the September quarter 1997, and cover:

- ordinary time hourly rates of pay excluding bonuses index
- ordinary time hourly rates of pay including bonuses index
- total hourly rates of pay excluding bonuses index
- total hourly rates of pay including bonuses index.
  In these indexes the term 'bonuses' refers to bonuses and commissions.

Design of the indexes

The WPIs measure changes over time in the price of wages and salaries unaffected by changes in the quality or quantity of work performed. A range of procedures have been developed to identify and measure quality and quantity changes and ensure that only pure price changes are reflected in the indexes.

Price-determining characteristics of the jobs are fixed to ensure that changes in these characteristics do not contribute toward index movements. The following are examples of changes in price-determining characteristics which are not reflected in index movements:

- changes in the nature of work performed (e.g. different tasks or responsibilities)
- changes in the quantity of work performed (e.g. the number of hours worked)
- changes in the characteristics of the job occupant (e.g. age, apprenticeship year, successful completion of training or a qualification, grade or level, experience, length of service, etc.)
- changes in the location where the work is performed.

Changes in the price of wages and salaries resulting from changes in the composition of the labour market are also excluded from index movements. To achieve this, a longitudinal survey methodology is used to measure a similar sample of jobs over time. Once a business is selected in the sample, it will be expected to provide data for a sample of jobs for a minimum of five years.

Wage price indexes

The ordinary time hourly rates of pay indexes that exclude bonuses measure quarterly changes in ordinary time hourly wage and salary rates. Changes in rates of pay reflected in these indexes (i.e. pure price changes) arise from a range of sources including award variations, enterprise and workplace agreements, minimum wage setting, individual contracts and informal arrangements.

These indexes are not affected by changes in:

- penalty payments for overtime, shifts, weekends and public holidays (which fluctuate depending on the number of hours paid at penalty rates)
- allowances which fluctuate (such as those paid according to how much work is performed under special work conditions e.g. height, dirt, heat allowances)
- bonus payments (which may, or may not, relate to an individual's work performance). These payments are specifically excluded when calculating ordinary time hourly wage and salary rates.

The effect of rolling ordinary time penalty payments and allowances into ordinary time hourly rates is excluded from these indexes. However, when overtime penalty payments and non-separable shift allowances are rolled into ordinary time hourly rates, the ordinary time indexes will increase accordingly.

The total hourly rates of pay indexes that exclude bonuses are based on a weighted combination of ordinary time hourly wage and salary rates and overtime hourly rates. As a result, the total hourly rates of pay indexes reflect changes in both the ordinary time and overtime hourly rates. However, the effect of changes in the amount of overtime paid at each overtime rate is not shown in these indexes.

Only those indexes that exclude bonuses and commissions are pure price indexes because bonus and commission payments can reflect changes in the quality of work performed. No attempt is made to remove this quality element from the indexes that include bonuses and commissions.

Scope and coverage

The target population of employers for the WPIs are all employing organisations in Australia (private and public sectors) except:

- enterprises primarily engaged in agriculture, forestry or fishing
- private households employing staff
- foreign embassies, consulates, etc.

A sample redesign was undertaken and the outcome implemented from the December quarter 2009. A result of this review was to stop collecting data on a quarterly basis from micro businesses (0-4 employment). The size and frequency of pay changes for jobs in micro businesses was found to be the same as businesses with employment of five or more. In late 2021, the ABS reviewed micro businesses again and confirmed that the size and frequency of

pay changes still aligned with businesses employing five or more employees. Therefore, micro businesses are treated as being out of coverage but remain in scope through their continued inclusion in the expenditure weights used in compiling the WPIs. The introduction of this change does not impact what the indexes are measuring.

All employee jobs in the target population of employers are in scope of the WPIs, except the following:

- Australian permanent defence force jobs
- non-salaried directors
- proprietors/partners of unincorporated businesses
- persons paid by commission only
- working proprietors/owner managers of Pty Ltd companies
- employees on workers' compensation who are not paid through the payroll
- 'non-maintainable' jobs (i.e. jobs that are expected to be occupied for less than six months of a year)
- jobs for which wages and salaries are not determined by the Australian labour market (e.g. most employees of Community Development Employment Programs, or jobs where the remuneration is set in a foreign country).

As such, full-time, part-time, permanent, casual, managerial and non-managerial jobs are in scope. Costs incurred by employers for work undertaken by self-employed persons such as consultants and subcontractors are out-of-scope, as they do not relate to employee jobs.

Data collection

Information for the WPI is collected each quarter by electronic collection from a sample survey of private and public sector employers selected from the ABS Business Register, which is informed by the Australian Business Register (ABR). Subsequently, the index series' produced are based, in part, on ABR data supplied by the Registrar to the ABS under A New Tax System (Australian Business Number) Act 1999, which requires that such data is only used for the purpose of carrying out functions of the ABS. Any discussion of data limitations or weaknesses is in the context of using the data for statistical purposes and is not related to the ability of the data to support the ABR’s core operational requirements.

Legislative requirements to ensure privacy and secrecy of this data have been followed. In accordance with the Census and Statistics Act 1905, results have been confidentialised to ensure that they are not likely to enable identification of a particular person or organization.

The survey reference date is the last pay period ending on or before the third Friday of the middle month of the quarter. Data for bonuses are collected in respect to those bonuses paid during the three month period ending on the third Friday of the middle month of the quarter.

In the first quarter they participate in the survey, each employer selects a sample of jobs from their workplace(s) using sampling instructions provided by the ABS, and provides information for these jobs, including detailed pricing specifications. In subsequent quarters survey respondents are asked to provide details of payments made to the current occupants of these same jobs. It is essential that the same jobs are priced in successive quarters, whether the individual job occupants are the same or not. Approximately 20,000 matched jobs are priced each quarter from the selected employers.

The sampling method retains the highest possible common sample of employers over time, and retains the same sampled jobs within those employers where possible. However, it is also necessary to ensure the WPIs continue to be relevant and representative over time. For these reasons, the employer sample is refreshed annually (for the December quarter) in a way that ensures a high proportion of common selections while allowing new employers to be represented in the sample. Refreshing the sample also allows the ABS to control the length of time that small businesses are included in the sample.

Between each annual refresh of the employer sample, a small number of employee jobs will be lost from the survey sample because of the closure of some businesses. In addition, some jobs in continuing businesses will be replaced in the sample because of restructuring and other job changes.

Weighting

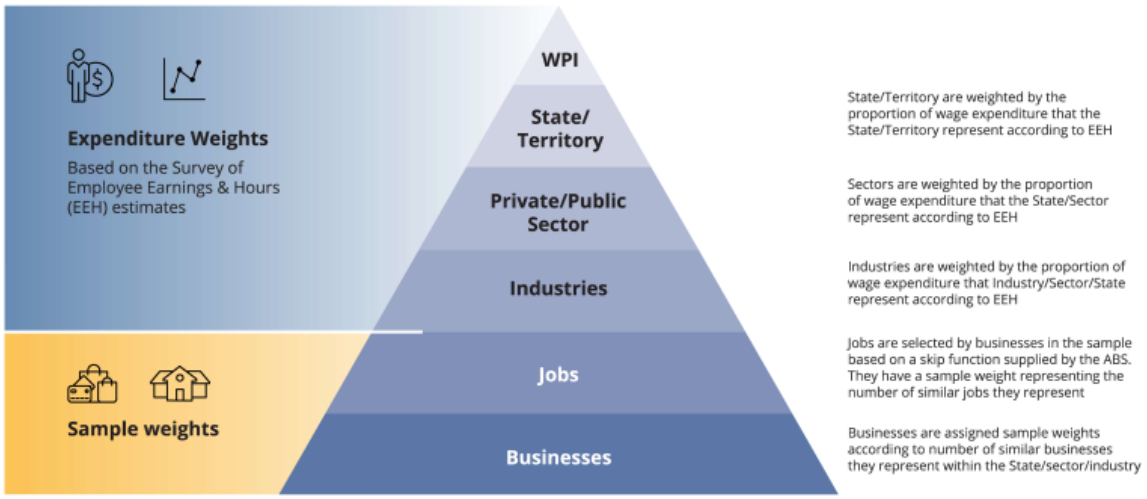
Expenditure weights are a measure of the relative importance of each elementary aggregate (EA), based on employers' expenditure on wages and salaries. Below the EA level, sample weights applied to each job on the WPI survey indicate the number of jobs in the Australian labour market a particular sampled job represents.

Businesses selected in the WPI are assigned sample weights according to the number of similar businesses they represent in their state, industry and sector. Jobs are assigned sample weights according to the number of jobs they represent in that business. The total sample weight for a job is determined by multiplying business and job sample weights together. This total sample weight is the number of jobs in the Australian labour market a particular sampled job represents.

The total employment figures for each business in the WPI survey are obtained from providers each September quarter. Job weights are updated based on these employment data and applied to the WPI sample each December quarter. These actions ensure the WPI sample remains representative.

Expenditure weights are generally updated every two years to reflect structural changes in the Australian economy, based on data collected within the biennial Survey of Employee Earnings and Hours (EEH). Once updated, the weights are fixed again, and a new weighting reference period is created. In the following quarters, prices will be compared using this new weighting reference period. This process is referred to as reweighting. Reweighting ensures the index remains relevant.

Figure 1. Wage Price Index weighting



The December quarter 2020 reweight was postponed until December quarter 2021. This was due to the postponement of the 2020 EEH until 2021, citing the impacts of COVID-19 on the labour market influencing data quality and accuracy.

The December quarter 2023 weighting uses wages and salaries expenditure sourced from the 2023 EEH. The EEH data items used in the December quarter 2023 weighting are: ordinary time earnings and total earnings. These data are price updated to represent current period values for each index. Prior to the December quarter 2016, only EEH

total earnings were used in weighting all indexes. This is the item which aligns most closely with the headline WPI series. The use of EEH ordinary time earnings to weight the ordinary time hourly rates of pay indexes improves the conceptual alignment of the expenditure weight to the index. This improvement in alignment has not impacted the indexes. The weights are available in Appendix A of this publication and as a data cube on the ABS website. The next reweight is scheduled to occur in the December quarter 2025.

When the expenditure weights are updated, the published index numbers will not recommence at 100.0. The series based on the old expenditure weights and that based on the new weights are linked to form a continuous series.

Method used to calculate analytical series 'Contribution to wages growth by method of setting pay'

The "Contributions to wage growth by method of setting pay" analytical series provides insights for users into the relative contribution of pay setting methods to wage growth in Australia.

In 2023 the ABS undertook a review on the method used to calculate the measure of contribution to the WPI by method of setting pay. The June quarter 2023 saw the analytical series recreated using alternate elementary aggregates (at sector by pay mechanism) in lieu of using the existing state by sector by industry EAs that form the building blocks of the WPI.

Original method

The original method of constructing the "Contributions to wage growth by method of setting pay" reused the data available from the WPI statistical processes and weights to construct the analytical series.

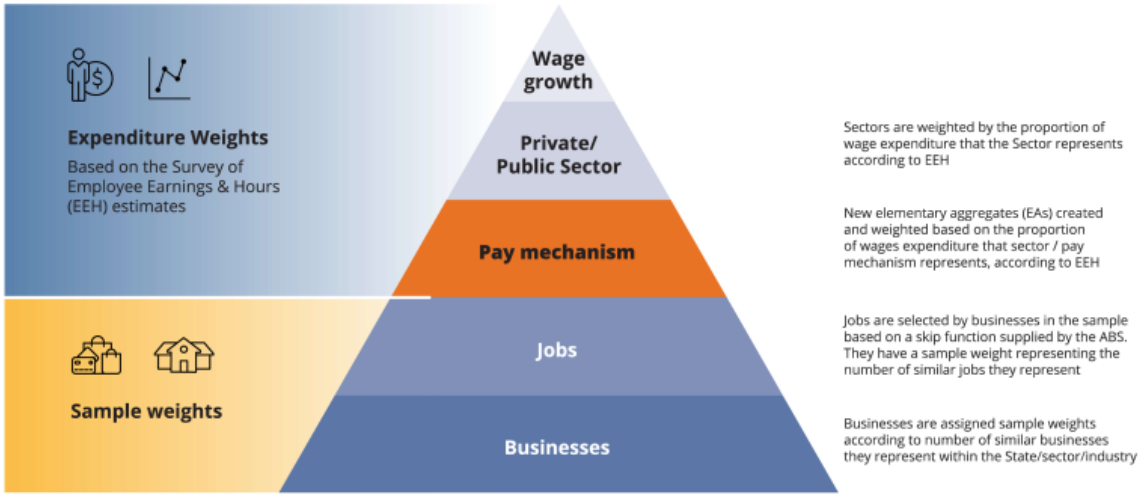
Information about the original method is included in Wage-setting methods and wage growth in Australia | Australian Bureau of Statistics (abs.gov.au) (/statistics/research/wage-setting-methods-and-wage-growth-australia) .

Updated method

The method used to calculate the analytical series "Contributions to wage growth by method of setting pay" has been updated so that the weight given to each type of pay setting mechanism aligns more closely with the proportion of total wages that each pay setting method represents, as reported in the Survey of Employee Earnings and Hours.

For the production of these analytical pay mechanism indexes, the elementary aggregate (EA) value aggregates are drawn from EEH using sector/pay mechanism groupings. See figure 2.

Figure 2. Weighting for pay mechanism analytical series



By pay setting method, the revised analytical series has provided an increased contribution to Awards jobs, most notably in the September quarters when Award wages are typically adjusted based on decisions by the Fair Work Commission. The contributions of Enterprise Agreements and Individual Agreements have offsetting decreases in the size of their contributions to the WPI.

Using this change in alternate elementary aggregates does not impact the methods applied in calculating the WPI.

This analytical series is not available at more disaggregated levels (i.e. industry or state analysis).

Interpretation of index numbers

Index numbers in this publication measure changes in the price of wages and salaries between the commencement of the series and a later period. Index number levels cannot be compared across states/territories as they do not provide comparative information on the relative levels of labour costs. Similarly, index number levels cannot be compared across sectors or industries. The usefulness of index numbers stems from the fact that index numbers for any two periods can be used to directly calculate the change or movement in the price of labour between the two periods. These movements can be compared across states/territories, sectors or industries.

Percentage change and rounding

The published index numbers have been rounded to one decimal place, and the percentage changes (also rounded to one decimal place) are calculated from the rounded index numbers. In some cases, this can result in the percentage change for the total level of a group of indexes being outside the range of the percentage changes for the component level indexes. Seasonally adjusted and trend quarterly estimates are calculated from unrounded original indexes. The percentage changes (rounded to one decimal place) are calculated from the rounded index numbers.

Index movements

Movements in indexes from one period to another can be expressed either as changes in index points or as percentage changes. In this publication, percentage changes are calculated to illustrate three different kinds of movements in indexes:

- movements between consecutive quarters
- movements between corresponding quarters of consecutive years (i.e. changes 'through the year')

- movements between consecutive financial years.

The following example illustrates the method of calculating changes in index points and percentage changes between any two periods:

Total hourly rates of pay excluding bonuses, All Sectors, Australia Index numbers, original (see table 1)
December quarter 2024 154.1
less December quarter 2023 149.3
Change in index points 4.8
Percentage change 4.8/149.3 x 100 = 3.2%

Financial year indexes

Index numbers for financial years are calculated as simple (arithmetic) averages of the four quarterly index numbers for the financial year. As the WPIs were first produced for the September quarter 1997, the first financial year index number that can be calculated is for 1997-98. Consequently, the first percentage change between financial years that can be calculated is between 1997-98 and 1998-99. The following example illustrates the method of calculating the financial year index number for 2023-24:

Total hourly rates of pay excluding bonuses, All Sectors, Australia Index numbers, original (see table 2)
September quarter 2023 147.9
plus December quarter 2023 149.3
plus March quarter 2024 150.2
plus June quarter 2024 151.1
Financial year 2023-24 598.5/4 = 149.6

Percentage changes between the index numbers for any two financial years can be calculated using the method outlined in Index Movements above.

Seasonally adjusted indexes

Seasonally adjusted estimates are derived by estimating and removing systematic calendar related effects from the original series. In most economic data these calendar related effects are a combination of the classical seasonal influences (e.g., the effect of the weather, social traditions, or administrative practices) plus other kinds of calendar related variations, such as the number of trading days, Easter or the proximity of significant days in the year (e.g. Christmas). In the seasonal adjustment process, both seasonal and other calendar related factors evolve over time to reflect changes in activity patterns. The seasonally adjusted estimates reflect the sampling and non-sampling errors to which the original estimates are subject.

The total hourly rates of pay excluding bonuses index is the only index of the WPI that is seasonally adjusted. Institutional effects largely drive the seasonality of this index. Important factors in determining this seasonality are the timing of agreements, the length of these agreements, and the timing of the implementation of significant wage determinations that impact on rates of pay. A significant institutional change in wage setting arrangements can affect the relative level (or trend) and seasonality of the index.

Prior to 2006, the Australian Industrial Relations Commission (AIRC) handed down annual Safety Net Review (SNR) decisions which set federal full-time minimum award rates. Since the commencement of the WPI, the SNR has contributed to the level of the index. Most of its impact on the WPI was in the September quarter with some residual effect in the December quarter each year. This impact contributed to the level of seasonality for those quarters. As a result of industrial relations changes associated with Work Choices there was no SNR decision in 2006. The setting of federal minimum wage rates became the responsibility of the Australian Fair Pay Commission (AFPC).

The AFPC's first decision was handed down on 26 October 2006 with a date of effect of 1 December 2006. The impact

on the WPI of the first AFPC ruling was mainly in the March quarter 2007. From 2007 to 2009, AFPC determinations impacted the December quarter WPI.

On 1 July 2009 Fair Work Australia (FWA) began operations as part of a new national workplace relations system underpinned by the Fair Work Act 2009. In June 2010 FWA announced its first annual minimum wage decision and the increase impacted the WPI in the September quarter 2010. Since 2010, minimum wage decisions have taken effect in the September quarter of each year and have resulted in a change of seasonality. To account for the change in timing, the seasonally adjusted and trend series were reanalysed in the September quarter 2010 to remove the influence of the different timing of minimum wage decisions in any year on the WPI.

Seasonal analysis methods

Prior to June quarter 2020, the WPI used a concurrent seasonal adjustment methodology to derive the adjustment factors. This method uses the original time series available at each reference period to estimate seasonal factors for the current and previous quarters. Concurrent seasonal adjustment is technically superior to the more traditional method of reanalysing seasonal patterns once each year because it uses all available data to fine tune the estimates of the seasonal component each quarter. With concurrent analysis, the seasonally adjusted series are subject to revision each quarter as the estimates of the seasonal factors are improved. In most instances, the only significant revisions will be to the combined adjustment factors for the previous quarter and for the same quarter in the preceding year as the reference quarter (i.e., if the latest quarter is Qt, then the most significant revisions will be to Qt-1 and Qt-4). Seasonal patterns are also reanalysed when there are known changes to regular events. This can lead to additional revisions.

This information paper (https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8514.01999?OpenDocument#abs-trend-and-seasonal-adjustment-during-covid-19) provides further information on forward factors and concurrent seasonal adjustment.

From the June quarter 2020 to the March quarter 2022, during the COVID-19 period, the WPI adopted a forward factor seasonal adjustment methodology. Details on the adoption of this methodology can be found here: Methods changes during the COVID-19 period (/articles/methods-changes-during-covid-19-period#abs-trend-and-seasonal-adjustment-during-covid-19) . Forward factor seasonal adjustment uses data up to a fixed point in time to estimate seasonal factors for the upcoming year. This process is repeated annually, with seasonal factors for previous years also reanalysed. Forward factor adjustment was used by the ABS up until the early 2000's.

The 2022 annual reanalysis of seasonally adjusted series determined it was appropriate to return to concurrent seasonal adjustment as the series had stabilised and the risk of disruption from COVID-19 was sufficiently low.

ARIMA modelling

The ABS uses Autoregressive Integrated Moving Averages (ARIMA) modelling techniques to produce seasonally adjusted estimates. ARIMA modelling is a technique that can be used to extend original estimates beyond the end of a time series. The extended values are temporary, intermediate values that are used internally to improve seasonal adjustment. They do not affect the original estimates and are discarded at the end of the seasonal adjustment process. The use of ARIMA modelling generally results in a reduction in revisions to the seasonally adjusted estimates when subsequent data becomes available. ARIMA modelling in the WPI was introduced in the June quarter 2008. For more information on the details of ARIMA modelling see the feature article 'Use of ARIMA modelling to reduce revisions (https://www.abs.gov.au/ausstats/abs@.nsf/94713ad445ff1425ca25682000192af2/5ea9181ef83b9f07ca256f1e007e0862!OpenDocument) ' in the October 2004 issue of Australian Economic Indicators (cat. no. 1350.0).

Trend estimates

The trend is a measure of the underlying direction of a series. The ABS trend estimates for the WPI are derived by applying a 7-term Henderson weighted moving average to all quarters of the respective seasonally adjusted indexes

except the first three and last three quarters. Trend estimates are created for these quarters by applying surrogates of the 7-term Henderson weighted moving average to the seasonally adjusted indexes, tailored to each time series. In general, trend estimates give a better indication of underlying behaviour than the seasonally adjusted estimates. Please refer to the ABS Information Paper, Information Paper: A Guide to Interpreting Time Series - Monitoring Trends, 2003 (https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/1349.02003?OpenDocument) .

Increases in minimum wage rates contribute to the relative level (or trend) of the WPI. A review of the seasonally adjusted series was undertaken in the September quarter 2010 to remove the impacts of the different timing of the increases in minimum wage rates. A trend break correction was applied between the June quarter and the September quarter 2009 to remove the shift in the underlying level as a result of no increase to minimum wage rates being awarded in 2009.

On 17 June 2020 the ABS announced the suspension of trend estimates during the COVID-19 period until the medium to long-term nature of the impact was understood, detailed within the article Methods changes during the COVID-19 period (https://www.abs.gov.au/articles/methods-changes-during-covid-19-period#abs-trend-and-seasonal-adjustment-during-covid-19) . The trend series was suspended as there was significant uncertainty whether the impacts of COVID-19 were to be short or medium to long-term and therefore could not be confidently assigned to the trend or not.

In June quarter 2022, WPI completed an annual series review of seasonal adjustment and as a result reinstated trend estimates for all series. The review determined that COVID-19 did not have large, unusual impacts on the series level, so it was considered appropriate to describe the trend through the years 2020 to 2022. As a result, the reinstated trend series included those years.

Index reference period

The index reference period of an index series is the period for which the value of the index is set to 100.0. From the September quarter 2009 issue of this publication the wage price indexes are calculated on an index reference period of 2008-09 = 100.0.

Revisions to indexes

Original index numbers will be released as final figures at the time they are first published. Revisions will only occur in exceptional circumstances. Trend and seasonally adjusted indexes may be revised as extra quarters are included and analysed for seasonal influences.

Related publications

Users may also wish to refer to the following publications which are available free on the ABS website:

Wage Price Index: Concepts, Sources and Methods (https://www.abs.gov.au/ausstats/abs@.nsf/mf/6351.0.55.001) ,
Information Paper: Update on ANZSIC 2006 Implementation for Labour Price Index, Australia, 2009 (https://www.abs.gov.au/ausstats/abs@.nsf/mf/6345.0.55.001) ,
Consumer Price Index, Australia (https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/consumer-price-index-australia/latest-release) ,
International Trade Price Indexes, Australia (https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/international-trade-price-indexes-australia/latest-release) ,
Producer Price Indexes, Australia (https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/producer-price-indexes-australia/latest-release) ,
Australian Consumer Price Index: Concepts, Sources and Methods (https://www.abs.gov.au/ausstats/abs@.nsf/mf/6461.0) ,
Producer and International Trade Price Indexes: Concepts, Sources and Methods (https://www.abs.gov.au/ausstats/abs@.nsf/mf/6429.0) ,

Earnings Guide (/statistics/understanding-statistics/guide-labour-statistics/earnings-guide) .

Current publications and other products released by the ABS are listed on the ABS website www.abs.gov.au. (https://www.abs.gov.au/) The ABS also issues a daily Release Advice on the website which details products to be released in the week ahead.

Enquiries

For enquiries about these and related statistics, contact the Customer Assistance Service via the ABS website Contact Us (/about/contact-us) page. The ABS Privacy Policy outlines how the ABS will handle any personal information that you provide to us.

Appendix A - distribution of expenditure on wages

Show all

As updated December quarter 2023

Distribution of employers' expenditure on wages, total earnings(a)(b)

		Private	Public	Total
		%	%	%
Australia by sector		78.7	21.3	100.0
State/Territory by sector				
	New South Wales	33.6	30.2	32.9
	Victoria	25.4	22.7	24.8
	Queensland	19.2	20.9	19.6
	South Australia	5.7	6.2	5.8
	Western Australia	12.2	10.1	11.7
	Tasmania	1.3	2.3	1.5
	Northern Territory	0.8	1.7	1.0
	Australian Capital Territory	1.9	5.8	2.7
	Australia	100.0	100.0	100.0
Broad industry group(c) by sector				
	Mining	4.2	(d)	3.3
	Manufacturing	8.6	(d)	6.8
	Electricity, gas, water and waste services	1.1	3.5	1.6
	Construction	10.9	(d)	8.7
	Wholesale trade	5.4	(d)	4.3
	Retail trade	7.7	(d)	6.0
	Accommodation and food services	4.9	(d)	3.9
	Transport, postal and warehousing	4.7	(d)	4.6
	Information media and telecommunications	2.3	(d)	2.0
	Financial and insurance services	6.0	(d)	4.9
	Rental, hiring and real estate services	2.5	(d)	2.0
	Professional, scientific and technical services	13.9	1.6	11.3
	Administrative and support services	6.6	(d)	5.3
	Public administration and safety	1.0	32.4	7.7
	Education and training	4.4	25.6	9.0
	Health care and social assistance	11.1	28.9	14.9
	Arts and recreation services	1.2	(d)	1.0
	Other services	3.5	(d)	2.7
	All industries	100.0	100.0	100.0

a. See Weighting section above.

b. Components may not sum to 100.0 due to rounding.

c. Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (cat. no. 1292.0).

d. For the Public sector, these industries are combined and included in the 'All industries' total.

As updated December quarter 2023

Distribution of employers' expenditure on wages, ordinary time earnings(a)(b)

		Private	Public	Total
		%	%	%
Australia by sector		78.4	21.6	100.0
State/Territory by sector				
	New South Wales	33.8	30.2	33.0
	Victoria	25.5	22.8	25.0
	Queensland	19.1	20.9	19.5
	South Australia	5.7	6.2	5.8
	Western Australia	12.0	10.1	11.6
	Tasmania	1.3	2.3	1.5
	Northern Territory	0.8	1.7	1.0
	Australian Capital Territory	1.9	5.9	2.8
	Australia	100.0	100.0	100.0
Broad industry group(c) by sector				
	Mining	4.2	(d)	3.3
	Manufacturing	8.4	(d)	6.6
	Electricity, gas, water and waste services	1.0	3.4	1.5
	Construction	10.4	(d)	8.2
	Wholesale trade	5.5	(d)	4.3
	Retail trade	7.8	(d)	6.1
	Accommodation and food services	5.0	(d)	4.0
	Transport, postal and warehousing	4.4	(d)	4.4
	Information media and telecommunications	2.4	(d)	2.1
	Financial and insurance services	6.2	(d)	5.0
	Rental, hiring and real estate services	2.4	(d)	2.0
	Professional, scientific and technical services	14.3	1.6	11.6
	Administrative and support services	6.5	(d)	5.2
	Public administration and safety	0.9	32.5	7.8
	Education and training	4.6	26.1	9.2
	Health care and social assistance	11.4	28.5	15.1
	Arts and recreation services	1.2	(d)	1.1
	Other services	3.4	(d)	2.7
	All industries	100.0	100.0	100.0

a. See Weighting section above.

b. Components may not sum to 100.0 due to rounding.

c. Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (cat. no. 1292.0).

d. For the Public sector, these industries are combined and included in the 'All industries' total.

Appendix B – index numbers, method of setting pay

Show all

Index numbers by method of setting pay, original

	Enterprise Agreement	Individual Arrangement	Award
Dec-19	128.2	124.4	127.1
Mar-20	129.0	124.8	127.5
Jun-20	129.4	124.5	127.6
Sep-20	130.2	125.0	128.0
Dec-20	130.6	125.7	128.7
Mar-21	131.3	126.3	129.8
Jun-21	131.6	126.8	129.9
Sep-21	132.6	127.9	131.6
Dec-21	133.4	128.7	132.8
Mar-22	134.1	129.4	132.9
Jun-22	134.8	130.4	132.9
Sep-22	136.1	132.3	136.9
Dec-22	137.1	133.5	138.4
Mar-23	138.4	134.5	138.6
Jun-23	139.2	135.4	138.6
Sep-23	141.7	137.4	144.9
Dec-23	143.5	138.5	146.1

	Enterprise Agreement	Individual Arrangement	Award
Mar-24	144.3	139.4	146.3
Jun-24	145.2	140.3	146.4
Sep-24	147.0	142.0	150.3
Dec-24	148.1	142.9	150.5

Glossary

Show all

Bonuses

Payments made to a job occupant that are in addition to regular wages and salaries and which generally relate to the job occupant's, or the organisation's, performance. In the WPI, the term 'bonuses' refers to bonuses and commissions.

Elementary aggregates

The finest aggregations of jobs, in terms of state/territory, sector and industry group, for which expenditure weights are available.

Employee job

A job for which the occupant receives remuneration in wages, salary, payment in kind, or piece rates.

Employer

Organisation with one or more employees.

Expenditure weights

A measure of the relative importance of each elementary aggregate, based on employers' total expenditure on wages and salaries. Expenditure weights are used to combine elementary aggregate indexes into broader level indexes.

Index number

Measures the ratio of the price of labour between the commencement of the index series and a later period.

Index reference period

The period for which an index series is given the value of 100.0. The current index reference period for the WPI is the 2008-09 financial year.

Industry

Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (cat. no. 1292.0).

Ordinary time hourly rates of pay index

Measures change in ordinary time hourly rates of pay.

Ordinary time hours

Award, standard or agreed hours of work paid for at the ordinary rate.

Overtime hours

The number of hours paid for in excess of ordinary time hours.

Reference date

The reference date for this survey is the last pay period ending on or before the third Friday of the middle month of the quarter, except for bonuses which are collected in respect to those paid during the three month period ending on the third Friday of the middle month of the quarter.

Sector

Public sector comprises local government authorities and all government departments and agencies created by, or reporting to, the Commonwealth, or state/territory parliaments. The private sector comprises all organisations not classified as public sector.

Seasonal adjustment

Process of removing systematic calendar related effects from the original series.

Total hourly rates of pay index

Measures change in combined ordinary time and overtime hourly rates of pay.

Trend

A measure of the underlying direction of a series.

Wage price index

Measures changes in the price of wages.

Weight reference period

The period to which the expenditure weights relate.

Quality declaration

Institutional environment

For information on the institutional environment of the Australian Bureau of Statistics (ABS), including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment (/about/legislation-and-policy/abs-institutional-environment) .

Relevance

The Wage Price Index measures changes over time in the price of labour services, unaffected by changes in the quality and quantity of work performed (that is, indexes are unaffected by compositional change). It enables analysts and policy makers to assess the impact of changes in wage costs on the labour market, the economy more generally, households and the community. The survey results are used in formulating industrial relations, wages policies and economic analysis.

Wages and salaries account for the majority of expenditure on labour costs by employers. The 'headline' measure of the wage price index is the total hourly rates of pay excluding bonuses index. Wage price indexes are released for state and territory; sector (private/public) and broad industry groups.

Industry is classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006 (cat. no. 1292.0). Prior to the September quarter 2009, the ANZSIC 1993 version of the classification was used.

The target population of businesses for the WPI is all employing organisations in Australia (private and public

sectors) excluding:

- enterprises primarily engaged in agriculture, forestry or fishing
- private households employing staff
- foreign embassies, consulates, etc.

A sample redesign was undertaken and the outcome implemented from the December quarter 2009. A result of this review was to stop collecting data on a quarterly basis from micro businesses (0-4 employment). The size and frequency of pay changes for jobs in micro businesses was found to be the same as businesses with employment of five or more. In late 2021, the ABS reviewed micro businesses again and confirmed that the size and frequency of pay changes still aligned with businesses employing five or more employees. Therefore, micro businesses are treated as being out of coverage but remain in scope through their continued inclusion in the expenditure weights used in compiling the WPIs. The introduction of this change does not impact what the indexes are measuring.

All employee jobs in the target population of businesses are in scope of the WPI, with the exception of the following:

- Australian permanent defence force jobs
- non-maintainable jobs (i.e. jobs that are expected to be occupied for less than six months of a year)
- jobs for which wages and salaries are not determined by the Australian labour market (e.g. working proprietors of small incorporated enterprises, most employees of Community Development Employment Programs, and jobs where the remuneration is set in a foreign country).

Timeliness

Wage price indexes have been produced each quarter commencing from the September quarter 1997. The survey reference date is the last pay period ending on or before the third Friday of the middle month of the quarter, except for bonuses which are collected in respect to those paid during the three month period ending on the third Friday of the middle month of the quarter. Wage price indexes are released about three months after the reference date.

Accuracy

There are two principle sources of error in surveys, sampling error and non-sampling error. Non-sampling error arises from inaccuracies in collecting, recording and processing the data. Every effort has been made to reduce non-sampling error in the Wage Price Index by:

- careful design and testing of questionnaires and processing systems by providing instructions to businesses on how to select a sample of employee jobs
- detailed checking of completed survey forms
- instituting a range of procedures to ensure that jobs are priced to constant quality and quantity.

Sampling error occurs when a sample or subset of the population is surveyed rather than the entire population. One measure of the likely difference resulting from not including all of the population in the survey is given by the standard error. While the selection of employers and employee jobs are based on sampling techniques, standard errors are not available for the WPI. While it is reasonably straightforward to calculate sampling errors for a level estimate such as the total number of employees jobs, it is not so straightforward to determine standard errors for the WPI which uses both sampling and index methodologies.

Original index numbers are released as final figures at the time they are first published. Revisions have never occurred and will only occur in exceptional circumstances. Trend and seasonally adjusted indexes are revised as extra quarters are included and seasonal factors are updated.

Information for the WPI is collected each quarter by mail and online questionnaires from a sample survey of approximately 3,300 private and public sector employers selected from the ABS Business Register. These employers select a sample of jobs from their workplace(s) using instructions provided by the ABS. Approximately 20,000 jobs are priced each quarter.

Coherence

The methodology used to construct the WPI is similar to that used for other price indexes produced by the ABS such as the Consumer Price Index and the Producer Price Indexes. The sample for the WPI is selected from the ABS Business Register which is primarily based on registrations to the Australian Taxation Office's Pay As You Go Withholding scheme.

Employers are classified to an industry using the Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006 (cat. no. 1292.0). Up until June quarter 2009, the content and format of tables containing industry data reflected the 1993 version. Indexes for previous periods have been reproduced on an ANZSIC 2006 basis by reclassifying the businesses that reported data in earlier periods to the appropriate industry division of ANZSIC 2006. Index movements for Australia, state/territory, sector and All industries original series were not affected by the introduction of the new industry classification. Details about the change to ANZSIC 2006 are outlined in Information Paper: Update on ANZSIC 2006 Implementation for the Labour Price Index, Australia 2009 (cat. no. 6345.0.55.001) (https://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/6345.0.55.001) .

The ABS releases a range of statistics about wages and salaries. Each measure has different concepts and uses different methodologies. For information on ABS' earnings measures and how to use them, please see Earnings guide | Australian Bureau of Statistics (https://www.abs.gov.au/statistics/understanding-statistics/guide-labour-statistics/earnings-guide)

Interpretability

The WPI publication (cat. no. 6345.0) contains Methodology, Appendices and a Glossary that provide information about data sources, terminology and other technical aspects of the series. More detailed information can also be found in the Wage Price Index, Concepts, Sources and Methods (cat. no. 6351.0.55.001) (/statistics/detailed-methodology-information/concepts-sources-methods/wage-price-index-concepts-sources-and-methods/2012) .

The total hourly rates of pay excluding bonuses index Australia and sector level indexes are the only indexes of the WPI that are seasonally adjusted.

Seasonally adjusted estimates are derived by estimating and removing systematic calendar related effects from the original series. In most economic data these calendar related effects are a combination of seasonal influences e.g. the weather, social traditions or administrative practices plus other kinds of calendar related variations, such as the number of trading days, Easter or the proximity of significant days (e.g. Christmas).

Institutional effects largely drive the seasonality of the WPI. Important factors are the timing of effect of Australian workplace agreements and certified agreements, the length of these agreements, and the timing of the implementation of significant wage determinations that impact on rates of pay. A significant institutional change in wage setting arrangements can affect the relative level (or trend) and seasonality of the index.

The ABS has implemented improved methods of producing seasonally adjusted estimates, focussed on the application of Autoregressive Integrated Moving Average (ARIMA) modelling. Adoption of ARIMA modelling reduces the extent of revisions to the seasonally adjusted and trend estimates. For more information on the details of ARIMA modelling see feature article: Use of ARIMA modelling to reduce revisions (https://www.abs.gov.au/ausstats/abs@.nsf/94713ad445ff1425ca25682000192af2/5ea9181ef83b9f07ca256f1e007e0862!OpenDocument) in the October 2004

issue of Australian Economic Indicators (cat. no. 1350.0).

Accessibility

Additional wage price indexes are available on request. To make enquiries about such data, email WPI at wage.price.index@abs.gov.au (mailto:wage.price.index@abs.gov.au)